



COOKING EQUIPMENT

90 INDUSTRIAL PARK ROAD P.O. BOX 880, SACO, MAINE / 04072-0880
(207) 282-1589 • 800-225-3958 • FAX (207) 282-6283

SERVICE MANUAL HOLMAN CONVEYOR SANDWICH WARMER MODEL QT14

FOR SERVICE INFORMATION
U. S. AND CANADA CALL: TOLL FREE 1-800-225-3958

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**SERVICE MANUAL
HOLMAN CONVEYOR SANDWICH WARMER
MODEL QT14**

WARNING: THE FOLLOWING PROCEDURES ARE TO BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN ONLY!

WARNING: HIGH VOLTAGES ARE PRESENT IN THESE UNITS. MAKE SURE ALL INPUT POWER IS OFF BEFORE INSTALLING/REMOVING ANY PARTS, SERVICING, OR CLEANING UNIT.

WARNING: CHECK WITH LOCAL POWER COMPANY TO DETERMINE ACTUAL VOLTAGE AT JOB SITE.

NOTE: LUBRICATION OF DRIVE CHAIN WITH HIGH TEMP SYNTHETIC OR GRAPHITE BASED LUBRICANT IS REQUIRED AS PERIODIC MAINTENANCE. CALL HOLMAN FACTORY SERVICE DEPARTMENT FOR DETAILS.

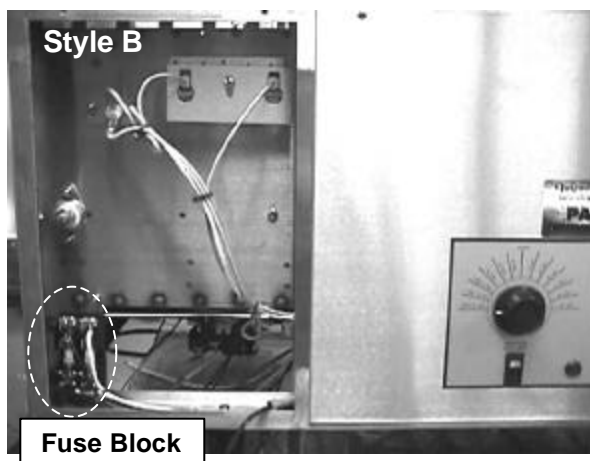
TROUBLESHOOTING GUIDE

A. UNIT WILL NOT HEAT; CONVEYOR BELT WILL NOT TURN.

- 1) Be sure main Circuit Breaker is switched to the ON position and there is power at the outlet.
- 2) Check to see that the unit is connected to power and Master On/Off is switched to the **ON** position.
- 3) Be sure HEAT LIMIT SWITCH is pushed in (see below).
- 4) Check both fuses.

B. UNIT WILL NOT HEAT, CONVEYOR TURNS.

- 1) Check to see if the Master On/Off Switch is in the ON position.
- 2) Press heat limit switch, located on the exit end of the Sandwich Warmer beneath the unload tray as shown above. If this reactivates the heater tubes, see section C.
- 3) Contact the Holman Cooking Equipment Factory Service Team at **1-800-225-3958** if assistance is required.



TRUBLESHOOTING GUIDE CONT. ON PAGE 2

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TROUBLESHOOTING GUIDE CONT.

C. HEAT LIMIT SWITCH

Your Holman Conveyor Sandwich Warmer is equipped with an automatically activated HEAT LIMIT SWITCH that interrupts the heater tube connections if the air temperature in the control box exceeds 190°F (88°C). This limit switch can be reset manually by pushing the button in the center of the switch that is located beneath the unload tray.

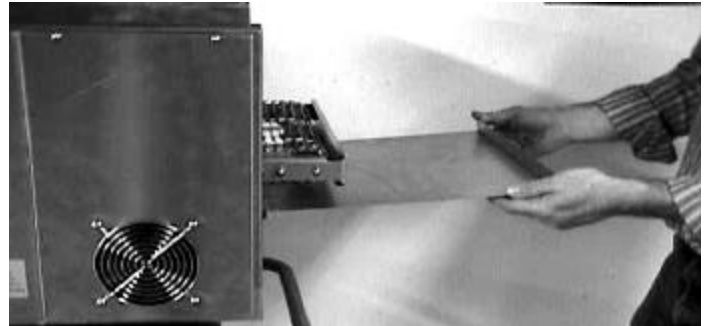


THE HEAT LIMIT SWITCH CAN BE ACTIVATED IF THERE IS NOT A PROPER AMOUNT OF AIRFLOW BEING GENERATED BY THE COOLING FANS. IF THIS OCCURS:

1) DISCONNECT UNIT FROM POWER SOURCE.

2) Check to see if air intake fans in the front of the unit are free of dust, grease or other obstructions.

3) Check to see if crumb trays (heat reflectors) are in place.



NEVER OPERATE UNIT WITHOUT CRUMB TRAYS IN POSITION AS THIS CAUSES OVERHEATING IN THE CONTROL BOX.

TRUBLESHOOTING GUIDE CONT. ON PAGE 3

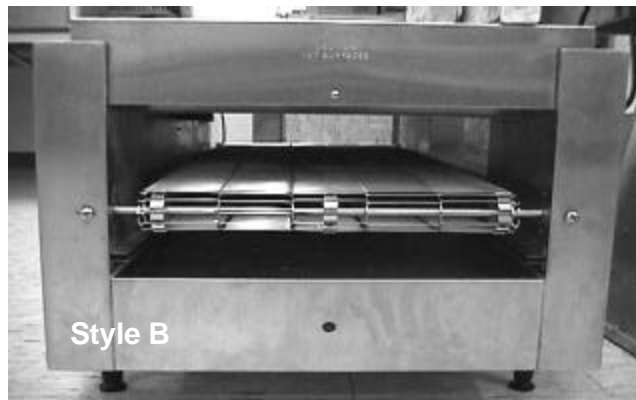
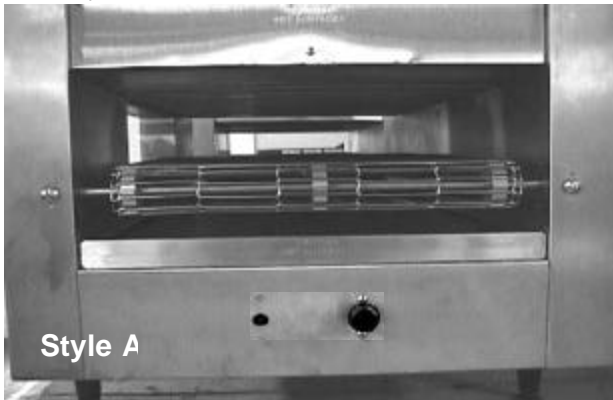
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TROUBLESHOOTING GUIDE CONT.

D. CONVEYOR WILL NOT TURN, UNIT HEATS PROPERLY.

1) DISCONNECT UNIT FROM POWER SOURCE.

2) Check both fuses.



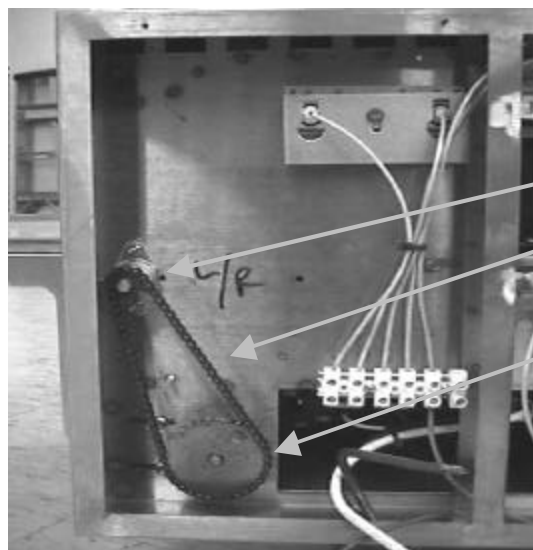
3) Check to see if there are obstructions in the conveyor system that may cause a jam.

4) If there are no obstructions found, manually move the conveyor belt to check for mechanical binding. If conveyor does not move freely, call the Holman Cooking Equipment Factory Service Team at **(1-800-225-3958)** as drive motor and/or variable speed control unit may have to be replaced (refer to page 5 for instructions on replacing drive motor).

IF CONVEYOR STILL DOES NOT TURN

5) If conveyor turns freely, remove power supply panel and check for loose sprockets. Realign any loose sprocket(s) and tighten allen screw.

6) Contact the Holman Cooking Equipment Factory Service Team at **1-800-225-3958** if assistance is required.



DRIVEN SPROCKET

DRIVE CHAIN

DRIVE SPROCKET

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TROUBLESHOOTING GUIDE CONT.

E. CONVEYOR TURNS AT ONE SPEED REGARDLESS OF SPEED CONTROL SETTING.

- 1) Contact the Holman Cooking Equipment Factory Service Team at **1-800-225-3958**, as variable speed control unit may have to be replaced.

F. COOLING FANS DO NOT START.

1) DISCONNECT UNIT FROM POWER SOURCE.

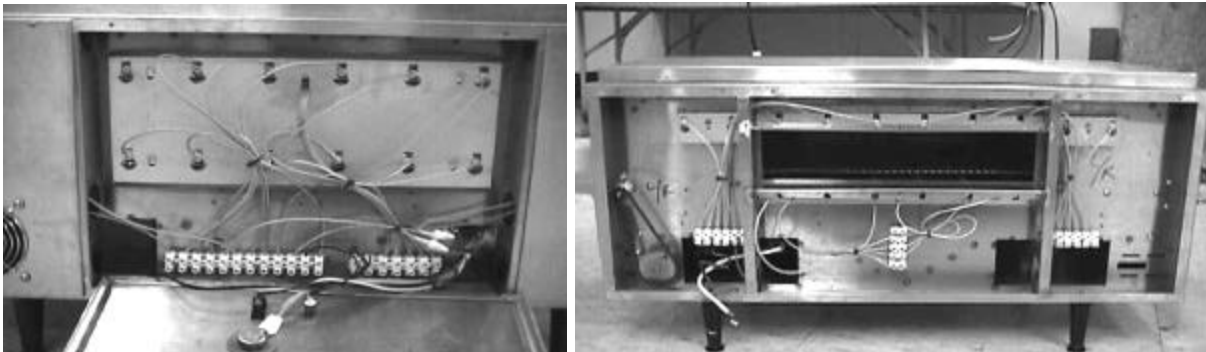
- 2) Remove panels with fan motors and check fan blades for obstructions.
- 3) Check fan motor cords for secure connection.
- 4) Call Holman Factory Service Team, as the fan switches and/or fan motor(s) may have to be replaced.

MAINTENANCE PROCEDURES

A. REPLACING HEATER TUBES (see below)

1) DISCONNECT UNIT FROM POWER SOURCE.

- 2) Carefully remove window in the back of the unit. See **Operations Manual** for detailed instructions to remove window.
- 3) Remove front control panel and back panels by removing the Philips head screws in each panel. Pull the top of each panel out slightly and lift up.
- 4) Locate defective heater tube and disconnect heater tube wires that require replacement from terminal block connections.
- 5) Loosen screws holding the heater tube retainer in place. Slide the retainer up to allow the heater tube to be removed, and tighten screws holding retainer.
- 6) GENTLY, pull defective heater tube out of unit.
- 7) GENTLY, place new heater tube into unit.
- 8) Once new heater tube is installed, loosen retainer screw, slide retainer back into original position and tighten. Make sure the ends of the quartz heater tubes are free to move slightly.
- 9) Reconnect heater tube wires to terminal block connections.
- 10) Replace panels and test unit for proper operation.



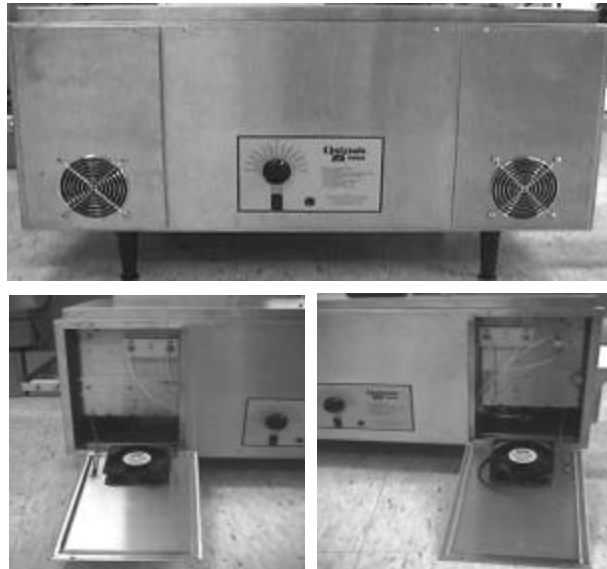
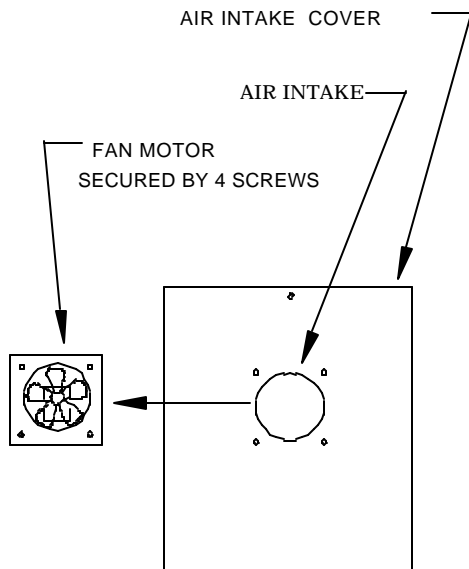
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MAINTENANCE PROCEDURES CONT.

B. REPLACING FAN MOTORS

1) DISCONNECT UNIT FROM POWER SOURCE.

- 2) Remove panel with the fan motor that needs to be replaced.
- 3) Unplug power supply cord from fan motor.
- 4) Remove (4) screws that hold fan motor and grill to cover.
- 5) Put replacement motor and grill in place and secure to the air intake cover with screws.
- 6) Reconnect power supply cord to fan motor.
- 7) Replace air intake panel.
- 8) Test to make sure air is being drawn into unit.



C. REPLACING BELT DRIVE MOTOR

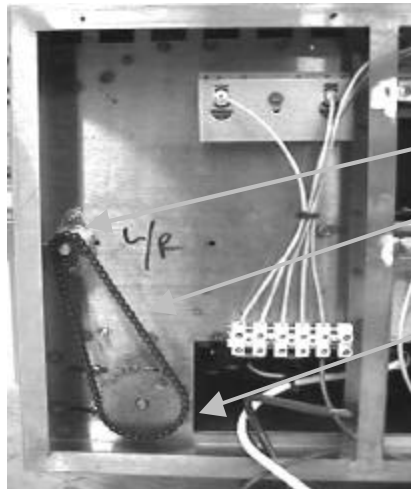
1) DISCONNECT UNIT FROM POWER SOURCE.

- 2) Carefully lay unit on top cover. **(DO NOT LAY UNIT ON WINDOW SIDE AS DAMAGE TO GLASS WILL OCCUR).**
- 3) Remove back panel attached to power supply utility box and bottom control box cover. Drive chain and sprockets will now be visible.
- 4) Loosen (4) screws holding motor in place. Slide the motor to provide slack in drive chain. Remove the drive chain. Remove sprocket from motor shaft by loosening the Allen screw on the sprocket collar.

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MAINTENANCE PROCEDURES CONT.

- 5) Disconnect the drive motor leads to the internal wiring. Motors are rated 208 Volts or 240 Volts, note which color leads are being used for these connections and which lead is capped with white tape. The new drive motor should use the same arrangement.
- 6) Remove the four screws that hold the drive motor in place and remove drive motor.

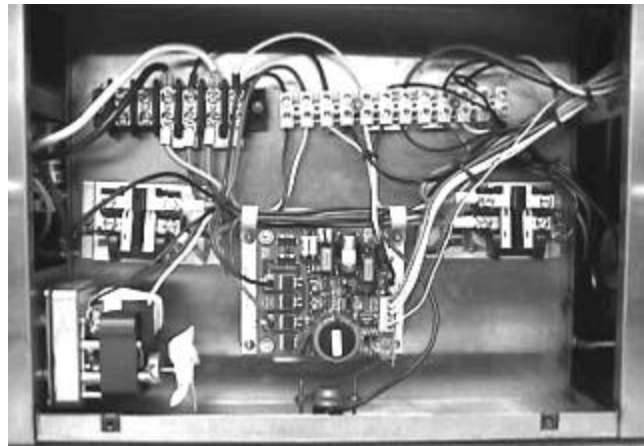
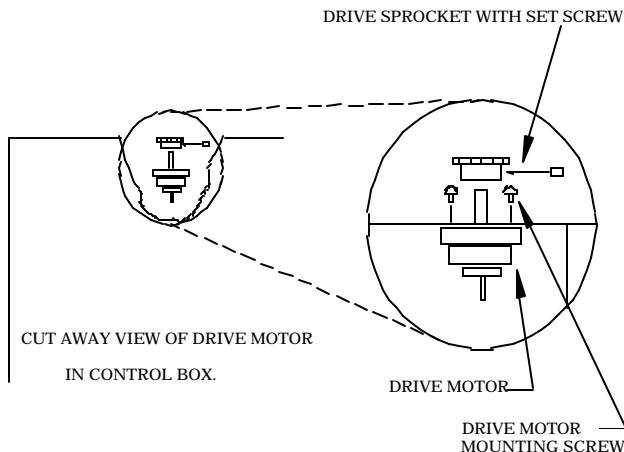


DRIVEN SPROCKET

DRIVE CHAIN

DRIVE SPROCKET

- 7) Put the new motor in place and loosely attach with the four screws removed from step 5.
- 8) Replace the sprocket onto the motor shaft, and then replace the drive chain onto the sprockets.
- 9) Slide the drive motor until the drive chain has about 1/8" slack when lightly pushed at the center of its top open run. Tighten the drive motor screws. Align drive and driven sprockets evenly before tightening to prevent binding. Secure by tightening Allen screw on sprocket collar.
- 10) Rewire the drive motor as described in step 4 above. Replace the panels and test for proper operation.



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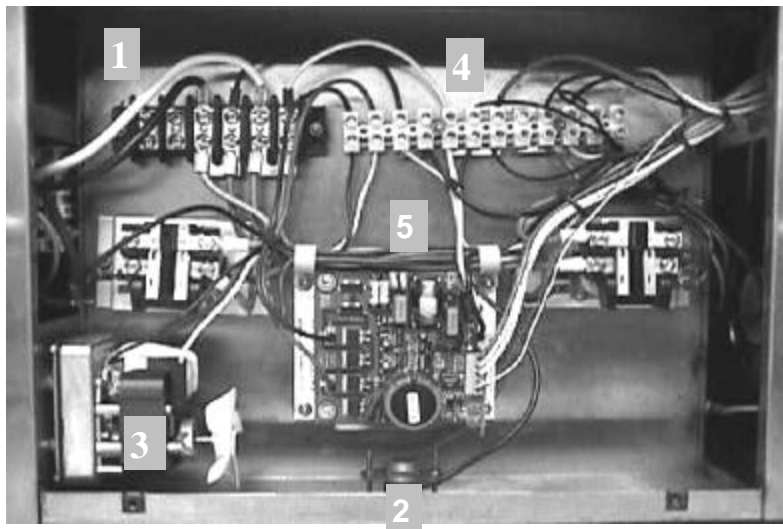
MAINTENANCE PROCEDURES CONT.

D. REPLACING THE VARIABLE SPEED MOTOR CONTROLLER (see below)

- 1) DISCONNECT UNIT FROM POWER SOURCE.**
- 2) Carefully lay unit on top cover. **(DO NOT LAY UNIT ON WINDOW SIDE AS DAMAGE TO GLASS WILL OCCUR).**
- 3) Remove Philips head screws holding control box cover in place.
- 4) Locate the motor controller mounted in the top center of the control box.
- 5) Wires from variable speed control go in to terminals located on the controller. **Note the location of the colored leads** and remove wires for variable speed control. **(refer to diagram on page 8 for wire locations).**
- 6) Disconnect the wires from terminals marked L, N, M1 and M2 (note which wires go to each terminal).
- 7) Remove Philips head screws (4ea.) holding controller in place.
- 8) Mount replacement control in the same manner as the old control.
- 9) Reconnect wires removed from old control **(refer to diagram on page 8 for wire locations).**
- 10) Replace control box cover, place unit on legs and connect to power supply. Test for proper operation.
- 11) Call the Holman Factory Service Team at 800-225-3958 if assistance is required.

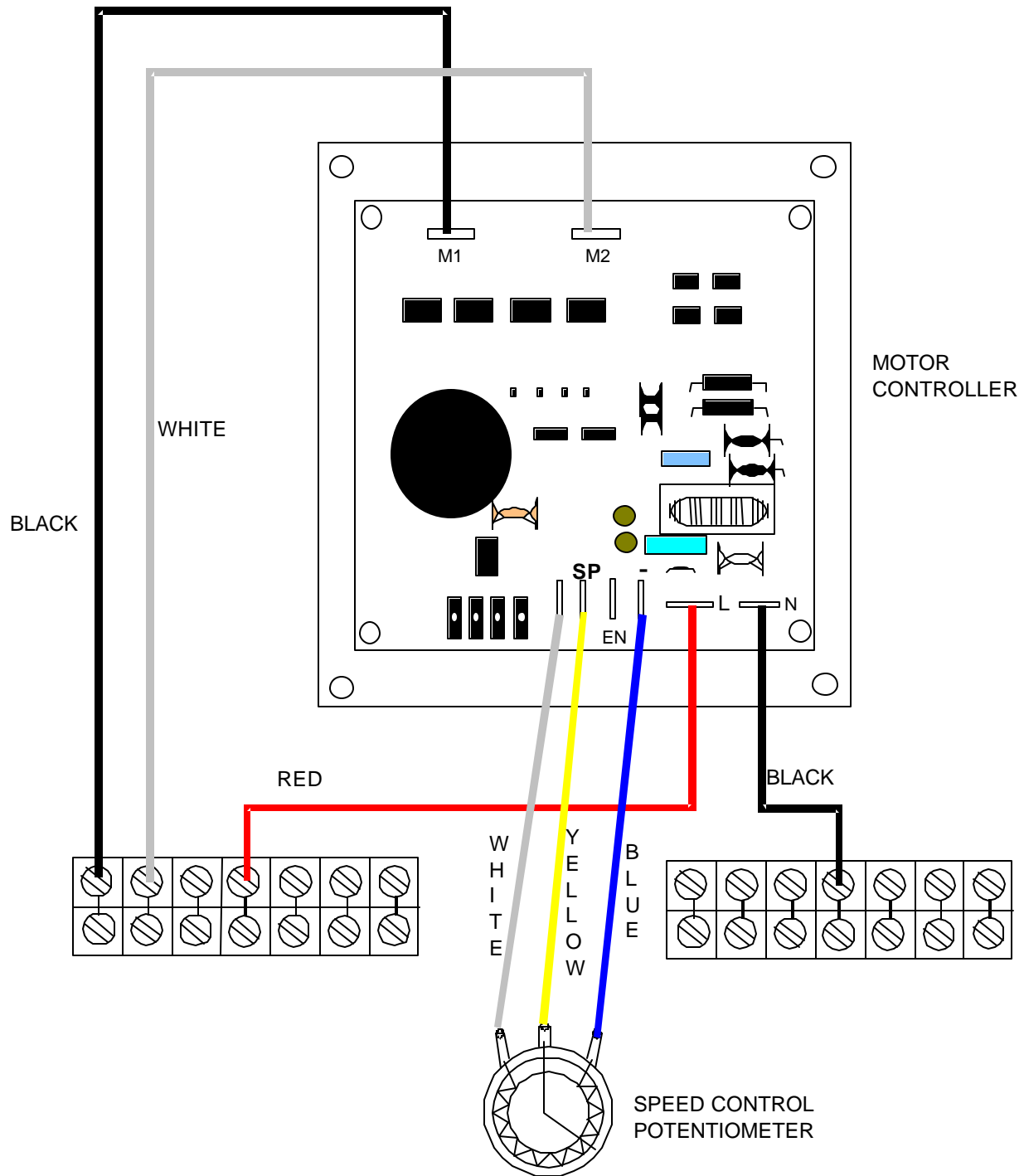
COMPONENT ARRANGEMENT

- 1) Contactor/Relay 2) Heat Limit Switch 3) Drive Motor 4) Terminal Strip 5) Motor Control



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CONTROLLER FOR DRIVE SYSTEM



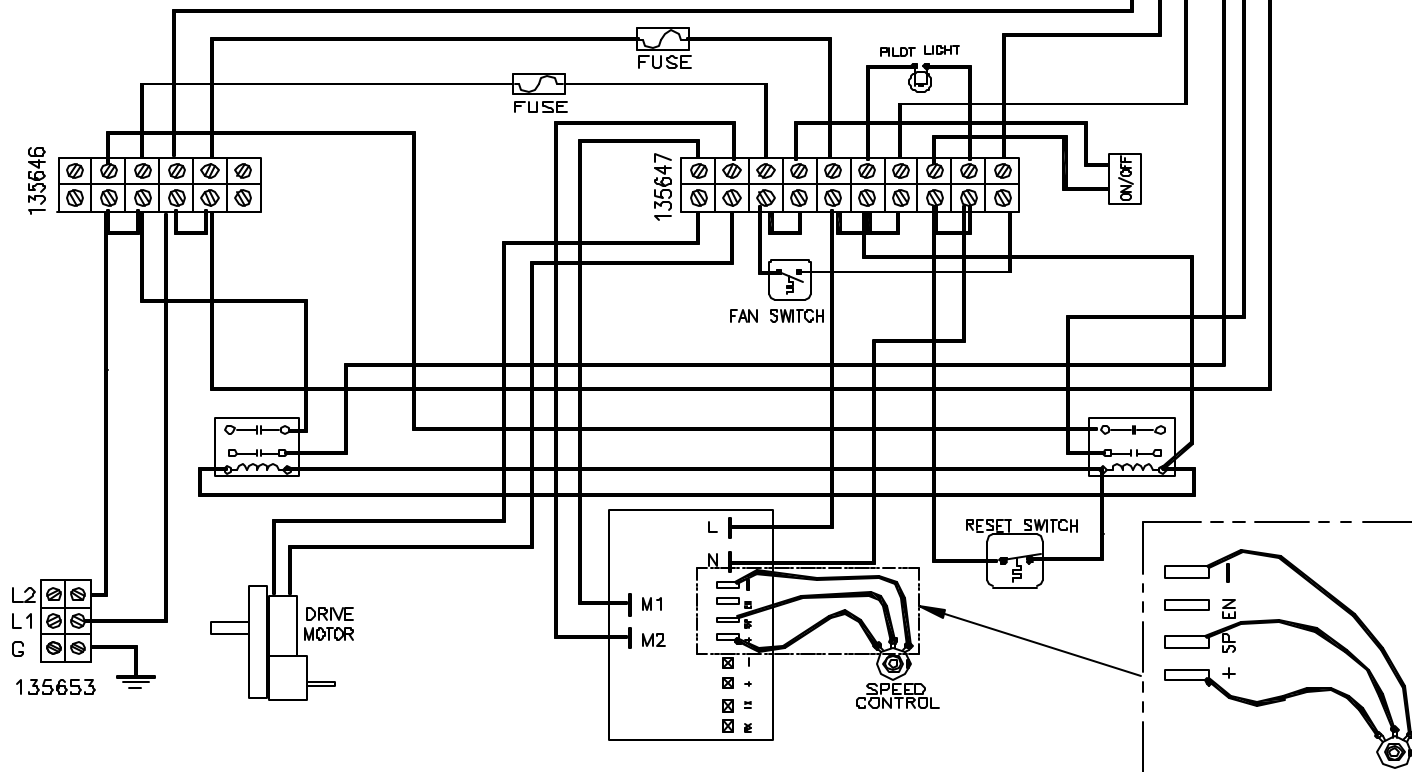
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HEATER TUBE PART LIST

PART No.	DESCRIPTION	QTY.
GE-198078	HEATER TUBE QUARTZ, TOP, 208V	10
GE-198077	HEATER TUBE QUARTZ, BOTTOM, 208V	6
GE-198081	HEATER TUBE QUARTZ, TOP, 240V	10
GE-198080	HEATER TUBE QUARTZ, BOTTOM, 240V	6
GE-198083	HEATER TUBE QUARTZ, TOP, 220V	10
GE-198082	HEATER TUBE QUARTZ BOTTOM, 220V	6

PARTS LIST

PART No.	DESCRIPTION	Qty.	PART No.	DESCRIPTION	Qty.
GE-402651	Small Heater Tube Retainer	4	2E-200574	Fan Switch	1
GE-402359	Large Heater Tube Retainer	1	2U-200577	Fan Motor	2
GD-160008	Conveyor Belt	1	2R-200562	Grill Fan Motor	2
2B-200626	Quick Clip Belt Links	3	2R-200721	Fan Blade 3"	1
2P-200785	Bushing, Spring loaded	2	2E-200535	Contactor/Relay, 40 amp	2
2P-200766	Spring	2	2U-200579	Motor Controller	1
GD-100924	Drive Shaft	1	2J-200427	Pilot Light	1
GE-100909	Idler Shaft	1	GE-118064	Speed Control	1
GE-100716	Center Idler Shaft	1	2E-200552	Rocker Switch	1
GB-112262	Shaft Bushing	4	2R-200761	Control Knob	1
2U-200509	Drive Motor (right to left)	1	2Q-200588	Neo-Ceram Window	1
2U-200504	Drive Motor (left to right)	1	GE-101029	Crumb Tray	2
ZZ-150008	Drive Chain	1	GE-100944	Unload Tray	1
2P-115362	Driven Sprocket	1	GE-402654	Lower Crumb Tray	1
2P-200648	Drive Sprocket	1	2R-200715	Leg, 4" Metal	4
2E-200566	Reset Switch	1			



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Anacon Potentiometer Input Circuit Testing

This check can be performed to verify the health of the analog input circuitry.

Overview:

For the Speed potentiometer to function properly it needs 5V across its terminals. For this the drive produces a 5V output for user connection. The terminals are labeled “+” and “-“. They are located on the lower left corner of the drive. The potentiometer then uses this voltage to send a signal from 0 to 5 volts back to the drive as a speed reference.

Safety:

Great care should be taken when testing the potentiometer because of the high voltage potential. There is only 5 volts from lead to lead but when referenced to ground the voltage may be much higher. In fact it could be as high as the applied power to the drive. The individual connection points are very close together. Care should be taken not to short across them with the meter leads.

Reference Voltage Check:

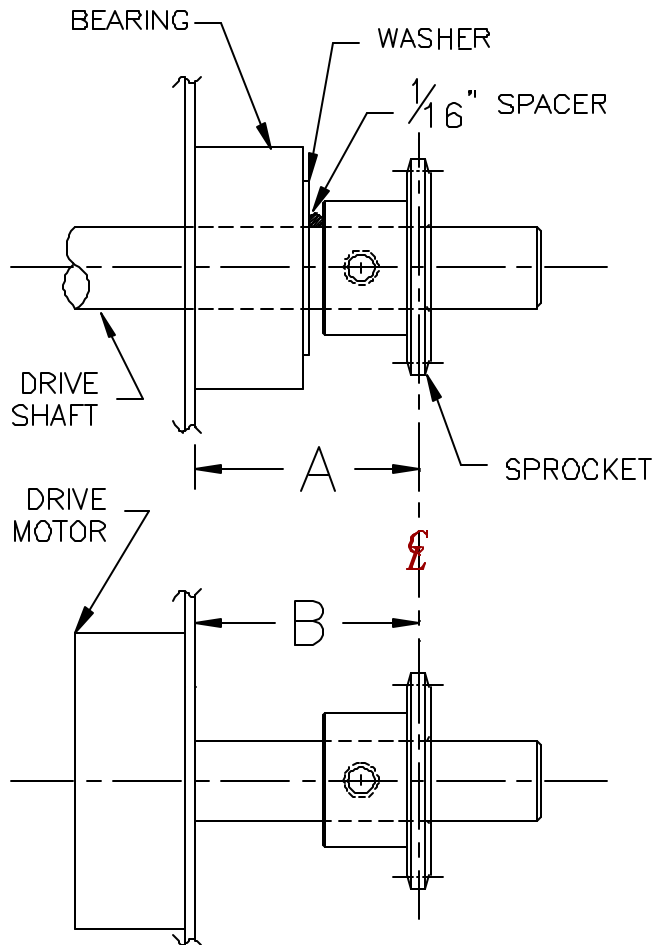
A meter connected to “+” and “-“ should read ~5V. If readings are otherwise try disconnecting the potentiometer and re-test.

Speed Reference Check:

To check the potentiometers health connect a meter from the “-“ terminal on the drive and the “sp” terminal. As you rotate the pot from one extreme to the other you should see a smooth transition from ~0 to ~5 Volts DC or ~5 to ~0 Volts DC.



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Drive Chain Alignment

Note: that during factory assembly, a $\frac{1}{8}$ " side-to-side play is adjusted into the driveshaft to allow for chassis expansion.

Unit must be cool.

Do NOT adjust position of the sprocket on the drive shaft.

Insert $\frac{1}{16}$ " spacer, i.e., a drill bit, between driveshaft sprocket and adjacent washer.

Push the sprocket against the $\frac{1}{16}$ " spacer, which results in the sprocket snug against the spacer, spacer against the washer, and washer against the bearing assembly.

Measure dimension A, the distance from the chassis to the center of the sprocket.

Adjust the sprocket on the drive motor so that dimension B, the distance from the chassis to the center of the motor sprocket is equal to dimension A $\pm \frac{1}{16}$ ".